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## A challenger for iSCSI

Zetara's IP-based transport promises fast, more affordable networked storage

Storage Insider, By Mario Apicella  
February 18, 2005

You have probably heard by now that Dell (Profile, Products, Articles) is offering an iSCSI version of the AX100, their entry-to array for SMBs developed in cooperation with EMC (Profile, Products, Articles).

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It's an option that makes much sense, considering the target market of the AX100, and one that makes the unit more appealing to first-time networked storage buyers because it saves the cost of building a separate FC (Fibre Channel) network.

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The starting price of the new model, named AX100i (of course), is \$5,000. With the inherently simpler management of iSCSI networks, the unit is less expensive to buy and to deploy than its FC version.

This new episode in the iSCSI vs. FC rivalry reminded me that another technology, with the promise of further lowering the cost of networked storage while maintaining exceptionally fast performance, will soon enter the tournament.

This new – and for now unnamed – storage networking technology originated from newcomer Zetara (accent is on the first syllable), which made the initial announcement in January. Zetara is not involved in manufacturing products, but its forthcoming technology has already captured the interest of companies such as Bell Microproducts, Netgear, and StorCase.

In essence, Zetara has created a new and unique approach to storage networking based on block-based access to remote disk drives over Ethernet using the familiar IP protocol.

That description could fit iSCSI as well, but Zetara takes a slightly different approach that essentially makes each networked drive smarter and able to communicate independently with multiple fact, using a proprietary card that translates UDP (user datagram protocol) frames into disk commands. Zetara makes each network citizen with its own IP address. On the computer side, device drivers and management software enable basic disk control and management, plus connectivity to the remote drives, of course.

The first striking difference between Zetara's technology and other storage networks is the lack of controllers on target storage

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used to a hierarchical storage structure where a host can access disk drives only via intermediary I/O controllers that removing potential source of bottlenecks from our minds may require some adjustments in our approach.

In a Zetara storage network, each drive can be the target of unmediated, point to point, or multicast communications with a host. The payload for each UDP packet can be as much as 32KB, a respectably high value that makes the technology a good candidate for intensive applications such as volume copies or backups.

It's interesting to note that the lack of controllers doesn't prevent the use of RAID for added performance and reliability. According to Zetara, its streamlined architecture translates into efficient software-based RAID.

If you're asking why Zetara would multicast frames, the reason is that a single logical volume can be spread for performance, or for improved reliability, across multiple physical drives — hence the need to multicast, or essentially send the same command to multiple addresses.

Zetara also allows you to slice a single drive into multiple volumes, which explains why each command bears an LBA (logical block address) range in addition to the IP address to identify its target.

I have seen a convincing demo of an embryonic Zetara network made up of a laptop host and a prototype box containing an iSCSI interface card. Soon we may see conceptually similar units enter the home and SOHO computing markets, but Zetara has ambitious plans for its technology that include entry level and midtier storage.

On paper, a technology such as Zetara's that promises fast performance, easy management and contained cost should be a winner in a market such as networked storage that, like the AX100i announcement suggests, is still struggling to find the right compromise between performance and cost.

In practice, the success of Zetara's approach to storage networks will be determined by its acceptance by mainstream vendors: enterprise, home computing, and SOHO markets. Zetara has no rivals — but conquering a space in the SMB and midtier storage market will be a struggle. Vendors of iSCSI solutions know this all too well.

Join me on The Storage Network blog to discuss this and other topics.

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